configured for regulating the cells from a plurality of input paths to the output path to a

network, comprising:

sorting a plurality of queues, each queue including a plurality of cells associated

with a communication device, wherein the plurality of queues are arranged according to a

5   weight and a data rate associated with each of the plurality of cells resulting in a plurality

of sorted queues of queues;

regulating an aggregate output of cells from each sorted queue of queues based

upon the data rates of the plurality of queues of the each sorted queue of queues; and

scheduling the regulated output of the aggregate output of cells from each sorted

10   queue of queues based upon [weights] a weight of the each sorted queue of queues, such

that the scheduled output is coupled to the output path;

wherein the scheduled output conforms to a plurality of characteristics of [the]

network connections, such that the network is efficiently used to carry the cells from the

plurality of input paths to a plurality of communication devices.

15

2.   A method as claimed in claim 1, wherein said plurality of input paths

represent virtual connections.

3.   A method as claimed in claim 1, wherein said plurality of input paths

20   represent input ports.

20.   (Amended)   A computer-implemented method for scheduling the output

of cells on an output path of a data switch, the data switch being configured for switching

the cells from a plurality of input paths to the output path, comprising:

providing a plurality of queues, each queue of said plurality of queues having a weight and an associated data rate, respective ones of said plurality of input paths being coupled to respective ones of said plurality of queues;

providing a plurality of queues of queues, the plurality of queues being coupled to

5   the plurality of queues of queues, such that the queues of the plurality of queues having a [similar] substantially equal weight being coupled to a same queue of queues of the plurality of queue of queues;

providing a plurality of traffic shapers, each of the plurality of queues of queues being input to an associated traffic shaper;

10   providing a scheduler, the plurality of traffic shapers being input to the scheduler, the scheduler being coupled to said output path.

Please add the following new claims.

22.   (New)   A computer-implemented method for shaping the output of cells

15   on an output path of a data transmitting device, the data transmitting device being configured for regulating the cells from a plurality of input paths to the output path to a network, comprising:

sorting a plurality of queues, each queue including a plurality of cells associated with a communication device, wherein the plurality of queues are arranged according to a

20   weight and a data rate associated with each of the plurality of cells resulting in a plurality of sorted queues of queues;

regulating an aggregate output of cells from each sorted queue of queues based upon the data rates of the plurality of queues of the each sorted queue of queues; and

scheduling the regulated aggregate output of cells from each sorted queue of

queues based upon a weight of the each sorted queue of queues, such that the scheduled

output is coupled to the output path;

wherein the scheduled output conforms to a plurality of characteristics of network

5   connections, such that the network is efficiently used to carry the cells from the plurality

of input paths to a plurality of communication devices.

23.   (New)   A method as claimed in claim 22, wherein said plurality of input

paths represent virtual connections.

10   24.   (New)   A method as claimed in claim 22, wherein said plurality of input

paths represent input ports.

25.   (New)   A method as claimed in claim 22, wherein the data transmitting

15   device is capable of outputting data encapsulated in at least one of cells and data packets.

26.   (New)   A method as claimed in claim 22, wherein the data transmitting

device is an ATM switch.

20   27.   (New)   A computer-implemented method for shaping the output of cells

on an output path of a data transmitting device, the data transmitting device being

configured for regulating the cells from a plurality of input paths to the output path to a

network, comprising:

sorting a plurality of queues, each queue including a plurality of cells associated

25   with a communication device, wherein the plurality of queues are arranged according to a

weight and a data rate associated with each of the plurality of cells resulting in a plurality

of sorted queues of queues;

regulating an aggregate output of cells from all sorted queue of queues based upon

the data rates of the plurality of queues of the each sorted queue of queues; and

5   scheduling the regulated aggregate output of cells from each sorted queue of

queues based upon a weight of the each sorted queue of queues, such that the scheduled

output is coupled to the output path;

wherein the scheduled output conforms to a plurality of characteristics of network

connections, such that the network is efficiently used to carry the cells from the plurality

10   of input paths to a plurality of communication devices, the plurality of input paths

representing virtual connections.

        28.   (New) A computer-implemented method for shaping the output of cells on

an output path of a data transmitting device as recited in claim 27, wherein the data

15   transmitting device is capable of outputting data encapsulated in at least one of cells and

data packets.

        29   (New) A computer-implemented method for shaping the output of cells on

an output path of a data transmitting device as recited in claim 27, wherein the data

20   transmitting device is an ATM switch.

        30.   (New) A computer-implemented method for shaping the output of cells

on an output path of a data transmitting device, the data transmitting device being

configured for regulating the cells from a plurality of input paths to the output path to a

25   network, comprising:

sorting a plurality of queues, each queue including a plurality of cells associated with a communication device, wherein the plurality of queues are arranged according to a weight and a data rate associated with each of the plurality of cells resulting in a plurality of sorted queues of queues;

5   regulating an aggregate output of cells from all sorted queue of queues based upon the data rates of the plurality of queues of the each sorted queue of queues; and

scheduling the regulated aggregate output of cells from each sorted queue of queues based upon a weight of the each sorted queue of queues, such that the scheduled output is coupled to the output path;

10   wherein the scheduled output conforms to a plurality of characteristics of network connections, such that the network is efficiently used to carry the cells from the plurality of input paths to a plurality of communication devices, the plurality of input paths representing virtual connections, and the data transmitting device is an ATM switch.

15   31.   (New) A computer-implemented method for scheduling the output of cells on an output path of a data switch, the data switch being configured for switching the cells from a plurality of input paths to the output path, comprising:

providing a plurality of queues, each queue of said plurality of queues having a weight and an associated data rate, respective ones of said plurality of input paths being coupled to respective ones of said plurality of queues;

20   coupled to respective ones of said plurality of queues;

providing a plurality of queues of queues, the plurality of queues being coupled to the plurality of queues of queues, such that the queues of the plurality of queues having a substantially equal weight being coupled to a same queue of queues of the plurality of queue of queues;